



This document is one appendix from the EPA "Handbook for Developing Watershed Plans to Restore and Protect Our Waters," published in October 2005. The reference number is EPA 841-B-05-005. You can find the entire document <http://www.epa.gov/owow/nps/pubs.html>.

Handbook for Developing Watershed Plans to Restore and Protect Our Waters

Appendix A Resources

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Appendix A

Resources

General Watershed Planning Information

The Indiana Watershed Planning Guide

This guide was developed by the Indiana Department of Environmental Management to assist local groups in developing successful watershed plans and to establish a common approach for watershed planning throughout Indiana. It helps users answer the following watershed planning questions: Where are we now? Where do we want to be? How are we going to get there? How will we know when we've arrived? The guide is available at www.in.gov/idem/water/planbr/wsm/iwpg/content.html.

Michigan's Developing a Watershed Management Plan for Water Quality: An Introductory Guide

This guide was developed to help local units of government, nonprofit organizations, and citizens develop watershed management plans. It outlines a process for gathering people, information, and resources to protect and improve Michigan's water resources. The guide is available for download at www.deq.state.mi.us/documents/deq-swq-nps-Watershe.pdf.

Ohio EPA's A Guide to Developing Local Watershed Action Plans in Ohio

This guide helps users develop local watershed plans. It provides background information about watershed planning, including the watershed approach, what a watershed plan is and why it is important to develop one, why the plan needs to be locally based, who should participate in planning, when to prepare the plan, and limitations to the approach. The guide also provides guidelines to help users get started with the planning process, inventory the watershed, define the problem, develop solutions and set goals, and implement the action plan. The guide is available for download at www.epa.state.oh.us/dsw/nps/wsguide.pdf.

Pennsylvania's Watershed Stewardship - A Planning and Resource Guide

This guide, which was developed by the Pennsylvania Department of Environmental Protection, consists of six toolboxes designed to give grassroots watershed groups and local governments guidance and a framework for developing comprehensive watershed plans that address local goals, are compatible with regional and state-scale planning efforts, and are based on the most current information available. The Guide focuses on six components,

including watershed organization development and sustainability, securing financial and human resources, watershed assessments, developing the watershed management plan, implementation, and monitoring for success. The guide is available on CD or hardcopy by contacting the Watershed Protection Division at 717-772 5807 or emcdonald@state.pa.us. The guide may also be downloaded at <http://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/wsnotebks/newbooks/guide%20intro1.doc>.

The California Watershed Assessment Manual (CWAM)

The California Watershed Assessment Manual provides guidance for conducting a watershed assessment in California. It is intended to support the planning and technical needs primarily of watershed groups, but also local and state agencies, academic scientists, consultants, and individuals involved in developing and conducting a watershed assessment. The Manual includes guidance on planning and operational principles and steps that are useful for assessment processes anywhere in the state. The topics addressed in the Manual cover the primary natural and human processes in rural watersheds of northern and central California. The optimal organizational and geographic scale for use of the Manual is for watershed groups conducting assessments in 10,000-acre to 1 million-acre watersheds. The guide is available for download at <http://cwam.ucdavis.edu>.

The Watershed Project Management Guide

This book presents a four-phase approach to watershed management that is based on a collaborative process that responds to common needs and goals. Chapters in the book focus on watershed importance, the watershed management process, partnership development and operation, the assessment and problem identification phase, plan development, the watershed management plan, implementation, evaluation, monitoring, models, and social building capacity. The book is available for purchase at www.enviroscales.com/watershed_management.htm.

The Clean Water Act: An Owner's Manual

This manual was written by River Network to make the Clean Water Act comprehensible and usable for every American working to protect or restore a watershed. The *Owner's Manual* provides citizen activists with clear descriptions of the provisions of the act that enhance citizen involvement. The document is available for purchase at http://www.rivernetwork.org/marketplace/index.cfm?fuseaction=product.display&Product_ID=5.

The Urban Subwatershed Restoration Manual Series

This series from the Center for Watershed Protection includes 11 manuals on techniques to restore small urban watersheds. The entire series of manuals was written to organize the enormous amount of information needed to restore small urban watersheds in a format that watershed groups, municipal staff,

environmental consultants, and other users can access easily. The manuals are organized by the following topics: an integrated approach to restore small urban watersheds, methods for developing restoration plans for small urban watersheds, stormwater retrofit practices, stream repair and restoration practices, riparian management practices, discharge prevention techniques, pervious area management practices, pollution source control practices, municipal practices and programs, a user's manual for Unified Stream Assessment (USA), and a user's manual for Unified Subwatershed and Site Reconnaissance (USSR). The manuals are available from the Center for Watershed Protection at www.cwp.org/USRM_verify.htm.

Colorado Nonpoint Source Forum

The Colorado Nonpoint Source Forum, which is held each year, provides tools for watershed planning. The 2004 Forum was a daylong presentation about the nuts and bolts of preparing a watershed plan. A discussion of nine critical elements of watershed-based NPS pollution control plans was also provided. Additional information about the 2004 Colorado Nonpoint Source Forum is available at www.ourwater.org/econnection/connection15/npsforum.html. Information about the Colorado NPS Program is available at www.npscolorado.com.

Comprehensive Conservation and Management Plans

EPA's National Estuary Program was established to improve the quality of estuaries of national importance. The Clean Water Act section 320 directs EPA to develop plans for attaining or maintaining water quality in an estuary. This includes protection of public water supplies; protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife, allowance of recreational activities, in and on water; and required control of point and nonpoint sources of pollution to supplement existing controls of pollution. Each National Estuary Program establishes a Comprehensive Conservation and Management Plan (CCMP) to meet the goals of section 320. Program-specific CCMPs are available at www.epa.gov/owow/estuaries/ccmp/index.htm. Additional information about the NEP is available at www.epa.gov/nep.

Community-Based Watershed Management: Lessons from the National Estuary Program

This document (EPA 842-B-05-003) describes the highly successful approaches to watershed management implemented by National Estuary Programs throughout the United States. The principles and lessons learned contained in the document are relevant, not only to the NEPs, but also to other watershed organizations who are working to implement watershed protection and restoration efforts. To obtain a copy, contact the National Service Center for Environmental Publications (NSCEP) at 800-490-9198 or www.epa.gov/ncepihom.

A Guide for Local Governments: Wetlands and Watershed Management

This guidebook (Dr. Jon Kusler, Institute for Wetland Science and Public Policy of the Association of State Wetland Managers) was written to help local governments integrate water resources management and wetland ecosystem protection efforts. The guidebook has been written for engineers, biologists, botanists, planners, not for profit staff, legislators and others. It makes recommendations for integrating wetlands into broad watershed management efforts and more specific water programs, including floodplain management, stormwater management, source water protection, point source pollution control, and nonpoint source pollution control programs. Case study examples are provided from throughout the Nation. The guidebook is available for download at www.aswm.org/propub/pubs/aswm/wetlandswatershed.pdf.

Planning As Process: A Community Guide to Watershed Planning

Some of the most successful efforts at solving environmental problems have happened through local watershed planning projects. Since most environmental problems originate as local land use issues, it makes sense that local efforts should be the primary means of determining ways to control land use generated pollution. This guide, which was developed by the Washington State Department of Ecology, adapts those efforts and presents a watershed planning process that has been used through out Washington State by local entities who have successfully battled water quality problems. However, this guide can be applied to most environmental problems that require local involvement. Developing a general process that can be converted into the various applications is the idea behind this guide. The guidebook is available for download at <http://www.ecy.wa.gov/pubs/9901.pdf>.

Example Watershed Plans

Mill Creek Subwatershed Management Plan, Michigan:

www.hrwc.org/program/mid.htm#plan

White Oak Creek Watershed Action Plan, Ohio:

http://brownswcd.org/action_plan.htm

Upper Neuse Watershed Management Plan, North Carolina:

www.unrba.org/projact.htm

Virgin River Management Plan, Utah:

<http://wewcd.state.ut.us/WebPage/ReportsPlanAgreements/VRMP/TitlePage.html>

Oneida Lake Watershed Management Plan, New York:
www.cnyrpdb.org/oneidalake/

Clean Water Act Information

Section 319 Nonpoint Source Management Program

Congress amended the Clean Water Act in 1987 to establish the section 319 Nonpoint Source Management Program. Under section 319, states, territories, and American Indian tribes receive grant money to support a wide variety of activities, including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source management projects. Go to www.epa.gov/owow/nps/cwact.html.

Nonpoint Source Program and Grants Guidelines for States and Territories

EPA has developed guidelines for state implementation of nonpoint source management programs under section 319 and for awarding of section 319 grants to states to implement those programs. The guidelines are available, under “EPA Guidance,” at www.epa.gov/owow/nps/cwact.html.

Public Outreach and Stakeholder Involvement

Community Culture and the Environment: A Guide to Understanding a Sense of Place

This guide addresses the social and cultural aspects of community-based environmental protection. To obtain a copy, contact the National Service Center for Environmental Publications (NSCEP) at 800-490-9198 or www.epa.gov/ncepihom. The guide is also available at www.epa.gov/ecocommunity/pdf/ccecomplete.pdf.

Getting In Step: Engaging and Involving Stakeholders in Your Watershed

This guide provide tips and tools to identify stakeholders, make decisions using consensus, build a stakeholder group, maintain momentum in the watershed planning process, and resolve conflict. The guide is available only in pdf format at www.epa.gov/owow/watershed/outreach/documents/stakeholderguide.pdf.

Getting In Step: A Guide for Conducting Watershed Outreach Campaigns

This guide provides detailed information on developing and conducting effective watershed outreach campaigns. You can download a pdf version at www.epa.gov/owow/watershed/outreach/documents/getnstep.pdf.

Know Your Watershed

The Center for Technology Information Center (CTIC) has developed a series of documents to know your watershed. This information clearinghouse for watershed coordinators helps assure measurable progress toward local goals. The clearinghouse is available at www.ctic.purdue.edu/KYW.

Model Ordinance Language

Stormwater Manager's Resource Center

Located at CWP, the center provides technical assistance for stormwater management. CWP also provides a checklist to evaluate community needs and model ordinances. Go to www.stormwatercenter.net.

EPA's Web site for stormwater control operation and maintenance

This site provides model ordinance language, example ordinances, and supporting materials. Go to www.epa.gov/owow/nps/ordinance/stormwater.htm.

The Metropolitan North Georgia Water Planning District

The district provides a model stormwater management ordinance. Go to www.northgeorgiawater.com/stormwater.htm.

Putting the Water Quality Plan into Action: Tools for Local Governments

The Southeast Michigan Council of Governments provides specific actions local communities can implement to protect their water resources, including ordinances. Go to www.semcog.org.

Evaluation Tools

Logic Model Development Guide: Using Logic Models to Bring Together Planning, Evaluation, and Action

This guide provides a step-by-step approach using logic models to effectively evaluate programs. Available in pdf on their Web site at www.wkkf.org.

Logic Model Worksheets

The University of Wisconsin Cooperative Extension has done quite a bit of research on logic models and provides online courses and worksheets that you can download at www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html.

Seeking Signs of Success: A Guided Approach to More Effective Watershed Programs

This guide includes a step-by-step process and worksheets to conduct meaningful evaluations of watershed programs. Available for \$19.95 at www.rivercare.org.

Establishing Watershed Benchmarks — Tools for Gauging Progress (River Network. Volume 8, Number 3)

This issue of River Voices focuses on establishing watershed benchmarks, including watershed health, organizational health, and watershed activities. Available for \$2 at www.rivernetwork.org.

Monitoring Program Design and Implementation

Monitoring Guidance for Determining the Effectiveness of Nonpoint Source Controls

This EPA manual gives an overview of nonpoint source pollution and covers the development of a monitoring plan, data analysis, quality assurance/quality control, and biological monitoring. To obtain a copy, contact the National Service Center for Environmental Publications (NSCEP) at 800-490-9198 or www.epa.gov/ncepihom.

EPA's Monitoring and Assessment Web site

This site includes a wealth of information on assessment and reporting guidelines, databases and mapping capabilities, biological assessment, and volunteer monitoring. Go to www.epa.gov/owow/monitoring.

Elements of a State Water Monitoring and Assessment Program

This guidance recommends ten basic elements of a holistic, comprehensive monitoring program that serves all water quality management needs and addresses all waterbody types. It describes a process in which States develop a monitoring program strategy to implement these basic components over a period of up to 10 years. Go to www.epa.gov/owow/monitoring/elements.

DQOs, MQOs, and Performance Characteristics

The Methods and Data Comparability Board

This board is a workgroup of the National Water Quality Monitoring Council and has developed data and method quality objectives tools. Go to <http://wi.water.usgs.gov/methods/tools/dqomqo/index.htm>.

Consolidated Assessment and Listing Methodology (CALM) Appendix C

Appendix C provides information on statistical considerations for data quality

objectives and data quality assessments in water quality attainment studies. Go to www.epa.gov/owow/monitoring/calm/calm_appe.pdf.

Sampling Design

Biological Criteria: Technical Guidance for Survey Design and Statistical Evaluation of Biosurvey Data

This guidance provides methods to help managers interpret and gauge the confidence with which biological criteria can be used to make resource management decisions. Go to www.epa.gov/bioiweb1/html/biolstat.html.

Sampling and Analysis Plans (SAPs)

For more information on SAPs check out the U.S. Army Corps of Engineers publication titled Engineering and Design - Requirements for the Preparation of Sampling and Analysis Plans (specifically chapter 3 – Sampling and Analysis Plan: Format and Contents and Appendix J – Sampling and Analysis Plan Review Checklist). Go to www.usace.army.mil/publications/eng-manuals/em200-1-3.

Visual Stream Assessment Tools

Izaak Walton League Save Our Streams (SOS) Program

The Izaak Walton Save Our Streams (SOS) program is a national watershed education and outreach tool to provide innovative educational programs for groups and individuals. SOS has educated and motivated citizens to clean up stream corridors, monitor stream health, restore degraded streambanks and protect dwindling wetland acreage through biological and other assessments, education, and training. Go to www.iwla.org/sos.

Rapid Stream Assessment Technique (RSAT)

RSAT is a methodology for visually evaluating a stream to assess the stream quality and to identify potential pollutant sources. RSAT was developed for Montgomery County, Maryland, to provide a simple, rapid, reconnaissance-level assessment of stream quality conditions. Go to www.stormwatercenter.net/monitoring%20and%20assessment/rsat/smrc%20rsat.pdf.

Stream Visual Assessment Protocol (SVAP)

SVAP is designed as an introductory screening-level assessment method for people unfamiliar with stream assessments. The SVAP measures a maximum of 15 elements and is based on visual inspection of the physical and biological characteristics of instream and riparian environments. To download a copy of a SVAP document, go to www.nrcs.usda.gov/technical/ECS/aquatic/svapfnl.pdf.

Unified Subwatershed and Site Reconnaissance (USSR)

USSR is designed to assess upland areas for behaviors that can potentially influence water quality and to identify promising restoration project opportunities. Go to www.cwp.org.

Biological Assessment

Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers: Periphyton, Benthic Macroinvertebrates, and Fish, 2nd edition

This document describes refined and revised methods for conducting cost-effective biological assessments of streams and small rivers. It focuses on periphyton, benthic macroinvertebrates and fish assemblages, and on assessing the quality of the physical habitat. Go to www.epa.gov/owow/monitoring/rbp.

Stressor Identification Guidance Document

This guidance leads water resource managers through a rigorous process to identify stressors that cause biological impairment in aquatic ecosystems and to assemble cogent scientific evidence that supports conclusions about potential causes. Go to www.epa.gov/waterscience/biocriteria/stressors/stressorid.html.

Summary of Assessment Programs and Biocriteria Development for States, Tribes, Territories, Interstate Commissions: Streams and Wadeable Rivers

This EPA document includes an overview of biological assessment programs and protocols used at the state level. Go to www.epa.gov/bioindicators.

Modeling Tools

Compendium of Tools for Watershed Assessment and TMDL Development

The Compendium of Tools for Watershed Assessment and TMDL Development supports the watershed approach by summarizing available techniques and models that assess and predict physical, chemical, and biological conditions in waterbodies. Go to www.epa.gov/OWOW/tmdl/comptool.html.

The Council on Regulatory Environmental Modeling (CREM)

The Council on Regulatory Environmental Modeling (CREM) promotes consistency and consensus within the Agency on mathematical modeling issues, including model guidance, development, and application, and enhances both internal and external communications on modeling activities. The CREM is the Agency's central point to address modeling issues. CREM has a comprehensive online database that provides links to model reviews and resources. Go to <http://cfpub.epa.gov/crem>.

Management Measures

Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters

This 1992 EPA document describes management measures and associated management practices for all six nonpoint source categories. The document includes extensive cost and effectiveness information as well as examples and detailed descriptions of management practices. EPA has updated and expanded several chapters of the 1992 guidance. Updated sections are available for agriculture, forestry, marinas and recreational boating, and urban areas. All of the chapters can be downloaded at www.epa.gov/owow/nps/pubs.html.

International Stormwater Best Management Practices database

This database is operated by the Urban Water Resources Research Council of the American Society of Civil Engineers under a cooperative agreement with EPA. The database provides technical documents, software and tools to evaluate the effectiveness of stormwater runoff BMPs. These tools include standardized BMP monitoring and reporting protocols, a stormwater BMP database, BMP performance evaluation protocols, and BMP monitoring guidance. Go to www.bmpdatabase.org.

National Handbook of Conservation Practices

Written in 1977 by NRCS, it is updated annually. Provides details on nationally accepted management practices. Available in hardcopy and electronically at www.nrcs.usda.gov/technical/standards/nhcp.html.

National Menu of BMPs for Storm Water Phase II

This compliance assistance tool was developed by EPA to help small communities develop stormwater management programs and select management practices to control pollutants in runoff. It includes descriptions, cost and effectiveness data, and case study examples for more than 100 management practices. Go to <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm>.

Techniques for Tracking, Evaluating, and Reporting the Implementation of Nonpoint Source Control Measures

There are three documents that provide information on the techniques used to track, evaluate, and report on the implementation of nonpoint source control measures. Each document focuses on a different measure: agriculture, forestry, and urban areas. Go to www.epa.gov/owow/nps/pubs.html.

BMP Costing Information

A list of currently available cost references is given below. Most of these references are available for free download, but some might only be available at a university library or by purchase. You should look for local costs before using these references since construction costs and designs can vary between states.

USEPA BMP Fact Sheets

This comprehensive list of BMP fact sheets contains information on construction and maintenance costs as well as other monetary considerations. Information is provided on both structural and non-structural BMPs. Go to <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post.cfm>.

Environmental Quality Incentives Program (EQIP)

Some state NRCS offices publish cost information on agricultural practices to support the Environmental Quality Incentives Program (EQIP). For an example of this cost information, go to the “cost lists” section of the following Web site www.nc.nrcs.usda.gov/programs/EQIP/2005Signup.html.

Rouge River National Wet Weather Demonstration Project

This demonstration project has produced cost estimating criteria for both structural and non-structural management practices. The project continues to publish information on recent BMP projects. The most recent cost estimating criteria can be found at www.rougeriver.com/pdfs/stormwater/sr25.pdf.

International Stormwater BMP Database

The American Society of Civil Engineers and USEPA have developed a stormwater BMP database that contains site-specific BMP information from across the country. Depending on the location and type of BMP, the database may provide BMP cost information. It's available at www.bmpdatabase.org.

Low Impact Development Center

Among many LID resources, the Low Impact Development Center offers a series of fact sheets with BMP construction and maintenance cost information at www.lid-stormwater.net/intro/sitemap.htm.

RS Means Construction Cost Data

RS Means publishes construction cost data and updates this information annually. RS Means publications usually can be found at university libraries. In addition to construction cost, the RS Means publications contain indices for converting prices between cities and states. Go to www.rsmeans.com.

Performance and Whole Life Costs of Best Management Practices and Sustainable Urban Drainage Systems (2005)

Provides an extensive review of BMP costing techniques for selected controls, as well as a spreadsheet model to estimate costs. Reviewers include Black & Veatch Corporation; Center for Research in Water Resources, University of Texas; Glenrose Engineering; Urban Water Technology Center, University of Abertay; HR Wallingford Ltd.; Black & Veatch Consulting Ltd. The document is available from the Water Environment Research Foundation (WERF) at www.werf.org.

Funding Resources

List of NPS Funding Opportunities

This EPA site provides links to various federal, state, and private funding sources available to address nonpoint source issues. Go to www.epa.gov/owow/nps/funding.html.

Catalog of Federal Funding Opportunities

This interactive EPA Web site helps match project needs with funding sources. It also provides administrative guidelines and applicability for each source. Go to www.epa.gov/watershedfunding.

Grassroots Fundraising Journal

The *Grassroots Fundraising Journal* helps nonprofit organizations learn how to raise more money to support their goals. It offers practical, how-to instructions on implementing fundraising strategies such as direct mail, special events, major gift campaigns, and phone-a-thons. It also has tools to help you build a board of directors that is willing to raise money, choose a database to track donors, manage your time effectively, and ultimately develop a successful fundraising program. Go to www.grassrootsfundraising.org/index.html.

A Guidebook of Financial Tools

EPA's Environmental Financial Advisory Board and the Agency's network of university-based Environmental Finance Centers developed this guidebook as a working tool to enable practitioners in the public and private sectors to find appropriate methods to pay for environmental protection efforts. Go to www.epa.gov/efinpage/guidebook/guidebooktp.htm.